

CARMELLO et al
Appl. No. 09/746,219
November 10, 2008

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AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1- 12. (cancelled)

13. (currently amended) A catalyst support for selective gas phase reactions in a tubular fixed bed reactor comprising a metallic monolith having channels ~~the with~~ walls ~~of which are adapted to receive,~~ said channel walls for receiving a catalytically active phase or an intermediate layer ~~acting as a carrier for carrying~~ a catalytically active phase, wherein the surface area per unit volume of the monolith is at least 6 cm²/cm³, and wherein heat of reaction in an exothermic reaction is removed by the metallic monolith thereby reducing hot spots.

14. (original) A catalyst support according to claim 13 wherein the surface area per unit volume of the monolith is at least 10 cm²/cm³.

15 —25. (cancelled)

26. (currently amended) A method for selectively reacting reagents in a gas phase exothermic reaction comprising reacting said reagents in a tubular fixed bed reactor comprising a metallic monolith having channels ~~the with~~ walls ~~of which are adapted to receive~~ carrying a catalytically active phase or an intermediate layer ~~acting~~

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as a carrier for carrying a catalytically active phase, wherein said catalytically active phase catalyses a selective exothermic gas phase reaction, and wherein heat of reaction in said exothermic reaction is removed by the metallic monolith thereby reducing hot spots.

27. (previously presented) The method of claim 26, wherein the gas phase exothermic reaction is the selective chlorination and/or oxychlorination of alkenes or alkanes or the selective oxidation of alkenes.

28. (previously presented) The method of claim 27, wherein the reaction is selected from the group consisting of the conversion of ethylene with chlorine to 1,2-dichloroethane, the conversion of ethylene with hydrogen chloride with air or oxygen to give 1,2-dichloroethane, the conversion of ethane with hydrogen chloride with air or oxygen to give a saturated or unsaturated chlorinated hydrocarbon, and the reaction of methane with chlorine.

29. (previously presented) The method of claim 27 wherein the catalyst for the oxychlorination reaction of ethylene contains copper in an amount of 1 to 12 wt % of the intermediate layer.

30. (previously presented) The method of claim 29, wherein the catalyst also comprises at least one alkali metal, alkaline earth metal, group IIB metal or lanthanide in a total amount up to 6 wt % of the intermediate layer.

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31. (previously presented) The method of claim 27 wherein the catalyst for the oxychlorination reaction of ethane contains in the intermediate layer copper and an alkali metal in the atomic ratio 2:8.

32. (previously presented) The method of claim 31, wherein the catalyst also comprises at least one alkaline earth metal, group IIB metal or lanthanide.

33. (previously presented) The method of claim 27, wherein the catalyst for the selective oxidation reaction of ethylene comprises at least silver, and at least one alkali and/or alkaline earth metal.

34. (currently amended) A method for selectively reacting reagents in a gas phase endothermic reaction comprising reacting said reagents in a tubular fixed bed reactor comprising a metallic monolith having channels ~~the with walls of which are adapted to receive carrying~~ a catalytically active phase or an intermediate layer acting as a carrier for carrying a catalytically active phase, wherein said catalytically active phase catalyses a selective endothermic gas phase reaction, and wherein heat of reaction in said endothermic reaction is provided from the walls of the tubular reactor by the metallic monolith thereby reducing cold spots.

35. (previously presented) The method of claim 28 wherein the conversion of ethane with hydrogen chloride with air or oxygen produces 1,2-dichloroethane.

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36. (previously presented) The method of claim 28 wherein the conversion of ethane with hydrogen chloride with air or oxygen produces vinyl chloride.

37. (previously presented) The catalyst support of claim 13 further comprising a cell density of at least 3 cells/cm².

38. (previously presented) The catalyst support of claim 37 further comprising a cell density of between 8 cells/cm² and 100 cells/cm².

39. (previously presented) The catalyst support of claim 13 further comprising a length of equal to or greater than 5 cm.

40. (previously presented) The catalyst support of claim 39 further comprising a length of between 30 cm and 1 m.